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DATAMATION®

APRIL 1, 1987
A CAHNERS PUBLICATION
INTERNATIONAL EDITION

PLUS: THE INTEGRATED PROJECT SUPPORT ENVIRONMENT
FORTRAN AT 30 MODELING WITH MICROS

DATAMATION

DEPARTMENTS

9 **Look Ahead**
Hewlett-Packard is still having trouble with Spectrum's OS.

17 **Storage**
When IBM improved 3090 price/performance, expected new 3380 disk storage features were nowhere to be found. Jeff Moad investigates "IBM's Pirouette on a DASD Bottleneck."

19 **Minicomputers**
Gary McWilliams reports that Digital, always weak on transaction processing, may already be "On the Beach for an OLTP Entry."

24 **International Trade**
Foreign firms are attempting to enter Japan's international telecom market. Bob Poe reports that they may be "Swimming Upstream."

30 **Communications**
"Is There Life After IBM?" That's the question LAN vendor Sytek asks and Susan Kerr addresses.

41 **Software**
Relational Technology Inc. and Oracle Corp. are hotly competing to sell RDBMSs. Edith Myers describes "A Game of Leapfrog."

42 **Benchmarks**
IBM increases equipment rental prices and license charges on about 240 software products.

47 **Behind the News**
Some observers were of the opinion that it had run its course as long ago as 1961, but as it celebrates a milestone birthday, Stephen G. Davis reports, for "FORTRAN at 30: Formula for Success" remains an accurate epithet.

FEATURES

60 **The Imminent IPSE**
BY DAVID MORGAN
Many believe they have seen the software development future and that its name is IPSE. Early indications appear promising to IPSE doodlers, who now turn their attention to international interface standards.

69 **1987 Dp Budget Survey**
BY PARKER HODGES
Were dp managers reliable prophets in 1986? Which won the competition for budget dollars between minis and mainframes? Would consultants be wise to defer down payments on those yachts? Answers within.

76 **Getting Smarter, Spending Strategically**
Some top MIS execs tell DATAMATION that their budgets are driven by competitive factors, that they hold market share dearer than machines and MIPS, and that they are getting smarter in dealing with their suppliers.

81 **The Bottom 100**
BY POLLY ESTHER PANTZ
For the first time, DATAMATION takes a comprehensive look at the companies that reside in the dp industry's poorhouse, and finds good news: revenues are at record-breaking levels.

85 **Modeling With Micros**
BY DAVID STAMPS
You don't need a weatherman to know which way the wind blows, and with a pc, you may not need an economist to calculate the GNP either. The answer as to what effect this will have on econometric modeling is blowin' in the wind.

ION

REAL TIME

89 **Hardware**
Teradata introduces an Ethernet attachment for its database computer.

95 **Software**
Text managment systems are expected to experience significant growth over the next five years.

101 **Advertisers' Index**

101 **The Marketplace**

104 **Books**
Thomas R. Mylott III reviews three books on computer law: *The Law of Computer Technology; Bernacchi on Computer Law;* and *The Software Legal Book.*

104 **Calendar**
You won't want to miss COMDEX Spring and NCC '87, both coming up in June.

106 **People**
Steve Jerritts talks about rescuing the struggling Storage Technology.

106 **Letters**
Fans say what's right with their vendors.

108 **Readers' Forum**
The true art of management is revealed by Dennis E. Noonan, in "The Systems Development Cycle"; Frederic G. Withington tallies up some recent company changes, in "Powers."

INTERNATIONAL 64-1

Does not appear in all copies

- 3 **The Sigma Project**
BY ROBERT POE
Japan's five-year project to create an extensive set of software tools will greatly increase the productivity of its software developers and stimulate the local software industry.

- 9 **Getting the E-Mail Message Across**
BY JULIAN PATTERSON
The X.400 messaging standard has won widespread support from standards bodies, telephone authorities, and computer manufacturers worldwide.

3-D cover illustration by Ajin

INTERNATIONAL EDITION

APRIL 1, 1987
VOLUME 33
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THIS ISSUE, 195,090

1987 JESSE H. NEAL AWARD

Editorial

DATAMATION Team Honored

David R. Brousell

Ralph Emmett Carlyle

Karen Gullo

Parker Hodges

Willie Schatz

Kenneth Surabian

On March 18, six DATAMATION staffers received the ultimate award in the business publishing field. Managing editor Parker Hodges, news editor David R. Brousell, associate news editor Karen Gullo, senior writer Ralph Emmett Carlyle, Washington bureau manager Willie Schatz, and art director Kenneth Surabian were each presented with the 1987 Jesse H. Neal Editorial Achievement Award by the Association of Business Publishers.

DATAMATION's team was selected as number one in the hotly contested category of Best Department, Section, or Column for its outstanding work on the magazine's Behind the News section. We have always been very proud of the section and all the contributors to it. We are especially proud that the board of judges has recognized, as you have, the value of the Behind the News section.

Its selection further proves the global importance of information processing and its continuing impact on virtually every aspect of society. A small sampling of stories appearing in Behind the News during the award period (November 1985 through October 1986) covers computers as a target of international terrorism; computer and communications research funds for the Strategic Defense Initiative; mergers' effects on users and suppliers; computers in the Bhopal tragedy; and what MBAs are taught about information processing.

We are honored by our award-winning journalists and art director and honored too that you continue to demand the excellence that sets our goals at the pinnacle of our profession. ■

GEORGE DAVIS
EDITOR-IN-CHIEF

SOFTWARE

A Game of Leapfrog

Two RDBMS firms are racing to provide pc-based products, but users say they aren't working fast enough.

BY EDITH D. MYERS

With the intensity of cross-town football rivals, Relational Technology Inc. and Oracle Corp. have hotly competed in relational database management systems (RDBMSs) since the dawn of this decade.

Both firms are attacking microcomputers, the newest frontier for RDBMSs, with a fervor. But their efforts have not come fast enough for users, who say they are tired of waiting for overdue products.

The latest move came from RTI, Alameda, Calif., which in February introduced Ingres for Pcs, a pc version of the Ingres RDBMS the firm has been marketing in the mini and mainframe world since its incorporation in 1980.

On the heels of the announcement, Oracle, Belmont, Calif., was quick to point out to any who would listen that it has had a micro version of its Oracle RDBMS for two years. Now Oracle is promising a new version of the product this month that will contain all of the functionality of the mini version of its product's release 5.1.

Both companies' products were about three months later than their scheduled release dates. Oracle and RTI say the products were delayed because of technical difficulties that needed correcting. Says Larry DeBoever, a consultant with Digital Consulting Associates, Andover, Mass., "Everybody is late, and this is uncharted ground."

Small consolation to users. Les Loomis, a staff engineer with Xerox's Document Systems Business Unit, Sunnyvale, Calif., says of Oracle's promise, "First they told me January, then February, now it's April. I'm real disappointed." Loomis has been using Oracle's pc product for a year and a half and he likes it a lot. "I feel I'm using the Cadillac," he says. Originally, he had planned to use the pc product to develop applications for uploading to a VAX but "I found I could do most of what is needed on the pcs."

Relieving the Pressure

He did find report generation with the pc product limited because of limited RAM. "I'm told the next version will have enhanced extended memory to relieve the pressure on report generation."

Another Oracle user, Larry Byrne, dp manager for E.R. Carpenter Co., Richmond, Va., is luckier than Loomis. As an original beta test site for the pc product, his firm was awaiting delivery of the new version at press time. "The problem now is that it runs in 512K [of memory], but then there's not much left for anybody else."

Greg McCue, president of Tamarisk, a consulting firm headquartered in Mystic, Conn., was eager to get Ingres for the PC and could have done without the wait. "I'd been waiting two years," he says. He's more than happy with what he got as a beta user: "It's a programmer's dream. It has all the functionality of the mainframe version [of Ingres]."

The same functionality as the mainframe version is, of course, what Oracle is promising with its new release. DeBoever of Digital Consulting feels that Oracle, in introducing its pc product two years ago, "did what was sufficient to be able to say they had a product on the pc. They beat RTI, which chose to get it done well before releasing." He says of Ingres for Pcs, "It's superb technology. Now we'll hold our breath to see if they can market it."

Two benchmark comparison studies, one done last fall and one in February of this year, show RTI's Ingres for Pcs a clear number one in performance. One study was conducted by the University of Stuttgart, West Germany, and the other by Palmer & Associates Inc., Duluth, Ga.

RTI and Oracle weren't the only players in the benchmark studies. The Stuttgart study included Informix SQL, from Informix Software Inc., Menlo Park, Calif.; dBase III, from Ashton-Tate, Los Angeles; and R-Base 5000, from Microrim, Bellevue, Wash. Of these, only Informix SQL qualifies as an RDBMS, and it was the only additional product Palmer studied.

In 10 separate tests at Stuttgart, Ingres earned 10 first places, Oracle five second places, and Informix SQL, five third places. Palmer says he tested 22 queries under five different conditions of indices for a total of 110 queries. He says Ingres took first place 87 times and tied for first with Informix three times. Informix had 15 solo first places and Oracle five.

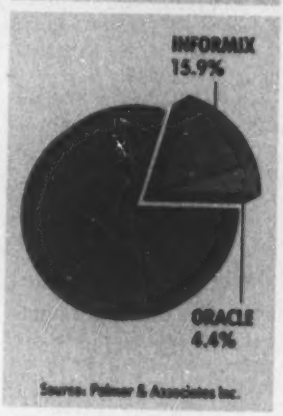
Informix SQL was introduced in the summer of 1985 and is, in the opinion of Laura King, vice president and a cofounder of Informix Software, a leading contender in the RDBMS-for-micros arena. King feels her company has an edge because "we've built from scratch on the micro whereas they [Oracle and RTI] are coming from the mini and mainframe world with big, ungainly creatures."

"EVERYBODY IS LATE DELIVERING."

Howard Bachrach, president of Bachrach-Woods Inc., Dallas, which develops custom systems for Fortune 1000 companies, has been using Informix SQL since it was first introduced because "I want to position my clients for internal growth on any systems I develop from the pc on up." When he selected Informix SQL, he felt it was the only game in town. "There are others out there now and they're probably all close in function, but I've been with Informix so long and have such confidence in their skills and their strategic direction. Still, if something better comes along...."

Earl Mott, manager of advanced manufacturing and engineering systems for furniture manufacturer Hayworth Corp., Holland, Mich., chose Oracle for the pc. He was familiar with the minicomputer version of the

First-Place Finishes



A benchmark study shows the three leading relational database management system products for microcomputers.

product from a previous job. "We ordered the pc and mini product and a DEC VAX, all at the same time with the intent to program on the pc applications to run on the VAX," Mott says. "But the VAX was late in coming and we had the pcs so we started on the pcs, both programming and running applications. When the VAX was delivered we literally passed programs to it without changing a single line."

Tom Greenwald, president of Why R+D, a San Antonio developer of claims processing and membership enrollment software for health maintenance organizations, and a beta site for RTI's pc product, decided he wanted to go relational two years ago and chose Ingres because it would work on a variety of

"FIRST THEY TOLD ME JANUARY, THEN FEBRUARY, NOW IT'S APRIL."

machines. He says the pc product "takes the load off the mainframe."

McCue of Tamarisk says he likes the Ingres pc version because "after working with Ingres all day at the office, I can go home and work on my pc in the same environment, and it can do so much more than dBase," which he had been using at home. He says he has seen Oracle at work, but prefers RTI's offering because "I like the style of Ingres." He feels some people choose Oracle "because it's nice to go with somebody who has sold a lot."

Charles Nocera, president of Enhanced Systems and Services, Westminster, Colo., is a value-added reseller for both Ingres and Oracle. He considers Ingres "technically better," but he'll continue offering Oracle because "there are people out there who want it, simply because it's been around longer."

RTI, Oracle, and Informix are hoping the 386 can enhance what their pc products can do. Informix claims to have the first relational database to use the Intel chip. King says both Informix SQL and another product, Informix 4GL, will be available on the Intel 80386 in the middle of the second quarter of this year, "taking advantage of the full 32-bit mode."

Ed Forman, group product marketing manager for Ingres for the PC at RTI, says his company plans to offer a micro version of Ingres that will bring the 386 pc into Ingres Star, the company's distributed relational database offering (see "Distributed DBMSs: In Search of Wonder Glue," Feb. 1, p. 41).

Eugene Shklar, director of marketing, pc product line, for Oracle, says 386 pieces will be part of the version to be announced in April. "It will bring mainframe capability to the desktop," he says.

"It's a competitive field," says Michael Howard, a consultant with the Seybold Group in San Jose, "and Oracle and RTI are highly competitive. They keep leapfrogging each other."

As in any sport, sometimes the players change teams. In January, Oracle announced that Peter R. Tierney, longtime corporate vice president of marketing for RTI, had joined the Menlo Park company as vice president of marketing. Says Tierney when asked how the Oracle pc product stacks up against the competition, "It's an apples and oranges type situation." ■

BENCHMARKS

Markups

IBM has increased equipment rental prices and license charges on about 240 software products by an average of 10% and raised per-call maintenance fees by about 15%. The company says the increases are the result of its normal business review. The 10% increases in one-time software license charges are effective immediately, affecting software across IBM's product line. The increase in hourly maintenance charges to $115 from $100 also is effective immediately. The maintenance charges are increased for magnetic tape products, including the 3510, 3411, 3420, 3422, 8809, and 3803 tape controller. IBM also says that certain information network products, including Information System 2 Sessions, will increase an average of 6%, effective April 1.

Markdowns

Digital Equipment Corp. is offering a one-year warranty on all hardware products purchased after March 2 as part of a new series of business-practice changes. The warranty includes installation, parts, and labor. A new dollar volume-based discount schedule that gives end-users and resellers equivalent discounts for large system purchases also was disclosed. Offering discounts of up to 16% for up to $10 million annual purchase levels, the schedule replaces separate VAX, MicroVAX, and PDP-11 discounts. The company has also agreed to requests by its Digital Equipment Computer User Society to permit operating system license transfers with used equipment (see "Battling Out of a Pricing Corner," March 15, p. 17). Separately, the company raised certain VAX software prices while lowering memory and disk-drive prices. Taken together, the changes should not raise system prices. They are designed to encourage customers to choose Digital memory and disk drives, says Harvey Weiss, vp of U.S. sales operations. New versions of the VAX 8200 and VAX 8300 that employ faster semiconductor parts and sport a lower price tag also were released. When combined with higher software fees for the multiuser MicroVAX II configurations, the new VAX 8230 and VAX 8330 hope to shift appeal away from the MicroVAX II.

New Unix

AT&T and Microsoft Corp. say they will market an operating system for microcomputers based on the Intel 80386 that will be compatible with both Microsoft's Xenix System V and with AT&T's Unix System V release 3.

The move will eliminate compatibility differences between the two implementations of Unix. The two companies say the combined operating system will be available in early 1988. They say they will continue to market their current Unix versions until the new product is available. The new product, to be called Unix, will support, without modification, applications written for Xenix and Unix V release 3.

At the same time, Microsoft officials say initial availability of the next generation of the company's MS/DOS operating system for 286-based and 386-based microcomputers has been delayed until late summer. The so-called A/DOS version of the operating system standard had been expected to be announced last month. Microsoft says A/DOS will be shipped to software developers in August. Microsoft won't say when the new version of MS/DOS will be generally available. The delayed version reportedly would support protected mode and larger internal memory addressing space. ■

This year's budget survey confirms the word from the grapevine: for the first time ever, MIS managers have budgeted more for minicomputers than they have for mainframes. Overall, budgets for 1987 are about what they were for 1986. Everybody is spending more on micros than had been planned, and personnel costs continue to take the biggest budget bites.

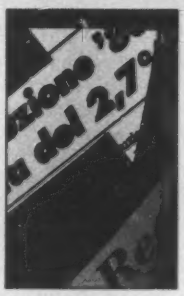
1987 Dp Budget Survey

3-D Illustration by Ajin

BY PARKER HODGES

For a while now, stock analysts and dp pundits have been high on Digital Equipment Corp. and down on IBM. Habit, however, made many scoff at the trendy talk pitting a "hot" company against the industry's longtime leader. But this year's DATAMATION Data Processing Budget Survey delivers some troubling news for Armonk: for the first time ever, MIS managers are budgeting more money for minis than for mainframes. The visions of the MIS fashion mavens have, for once, been confirmed by the numbers.

Dp managers from shops of all sizes report sizable drops in their mainframe plans for 1987. Respondents report that they've projected 7.4% of their total 1987 dp budget for mainframes, down from 8.3% in 1986. MIS managers from Fortune 1000 companies report the mainframe component of their budgets is down to 10.9% from 1986's 11.9%. Perhaps more telling is a comparison of what



managers *thought* they would spend on mainframes in 1986 to what they *actually* spent. Responding to last year's survey, managers said they would use 11.9% of their budgets for mainframes; this year they report they actually used 8.3% in 1986. For Fortune users the difference was as dramatic: they planned to spend 15.4% and actually spent 11.9% in 1986.

Pattern Just the Opposite

The pattern for mini money at Fortune 1000 companies was just the opposite: people spent more than they had planned. In response to last year's survey, those big users said they had allocated 8.2% of their budgets for minis. They actually used 10.2%. Managers for all sites surveyed, however, proved to be better forecasters: they forecast they'd spend 10.4% and report that expenditures were just that.

Otherwise, the budget news is fairly flat: it looks like another no-growth year for dp spending. While last year's survey suggested—based on managers' expectations—that there would be a slight rise in MIS expenditures, the truth proved otherwise.

The average dp budget in 1986 actually fell a few thousand dollars from the previous year, ending up at $1.6 million, about $100,000 less than the MIS managers had expected to spend. MIS managers are nevertheless hopeful that 1987 will bring them more cash to manage; they report an average dp budget of $1.7 million for this year.

It is no surprise that MIS managers at Fortune 1000 companies proved better funded. They also bucked the overall spending trend, seeing modest growth. While they reported last year that their average total 1986 budget would be $3.2 million, the actual average 1986 budget rose to $3.3 million from 1985's $3.15 million. In 1987, however, Fortune 1000 users expect to spend no more than the $3.3 million they did last year.

This is obviously not good news for vendors. The so-called slump is beginning to look more permanent. In fact, one dp manager said recently, "What slump? This is no slump—this is reality." As Hari Notowidigdo, vp of information systems at Wendy's International, Dublin, Ohio, notes in "Getting Smarter, Spending Strategically" (p. 76), "If the computer industry is in a slump, it's because we have become better managers."

Still, MIS managers do have money to spend in 1987. Where will the cash end up? Personnel costs will consume most of it, 32.8% of the average budget, up only slightly from 1986's actual 32.7%. Fortune 1000 managers expect to trim their personnel costs, hoping to reduce them to 35% in 1987 from 1986's actual 35.5%.

As noted above, mainframe vendors can take little comfort from the budget numbers. This year, MIS budgeters plan to spend 25% less on mainframes than they do on minicomputers. For the total sample, MIS managers report that mainframes will consume 7.4% of their budget, down more than 10% from 1986's mainframe share of spending. Fortune 1000 managers say that the mainframes' share of their budgets is down sharply from 1986.

Mini makers will do much better than mainframe specialists, but they will also feel selective applications of the budget knife. Big users may make up for some of the overall sample's plans to trim purchases. While the total sample plans to spend a bit less—down to 9.9% from 10.4%—of its budget for minicomputers in 1987, the Fortune 1000 respondents say they will up the mini percentage of their budgets by 8.8%, to 11.1% in 1987.

Budget makers also expect personal computers to consume less of their budgets this year than last, down to 9.7% for all sites, down slightly to 6% for For-

FIGURE 1 The Typical Dp Budget

	ALL SITES AVERAGE %		FORTUNE 1000 SITES AVERAGE%	
	1986	1987	1986	1987
Mainframe computers	8.3	7.4	11.9	10.9
Minicomputers	10.4	9.9	10.2	11.1
Mass storage and memory	2.8	3.2	3.5	4.1
Terminals	4.1	4.0	4.0	3.6
Desktop publishing	0.8	1.0	0.2	0.3
Personal computers	10.0	9.7	6.3	6.0
All printers & other peripherals	4.1	4.3	3.5	3.6
Mainframe and mini applications software	3.8	4.0	3.8	3.6
Mainframe and mini systems software	2.2	2.3	2.9	2.6
Microcomputer software	2.5	2.5	1.1	1.3
Data communications	3.5	4.1	4.6	5.1
Personnel	32.7	32.8	35.5	35.0
Consultants	1.9	1.7	1.5	1.1
Outside services	3.0	3.0	2.4	2.4
Supplies	5.7	6.0	4.7	5.1
Overhead: utilities, rent	3.9	4.1	3.7	4.2

FIGURE 2 Dp Budget Changes by Industry, 1986 vs. 1987

INDUSTRY SECTOR	% ALL SITES	% FORTUNE 1000 SITES
Survey Average	5.1	1.2
Manufacturing, dp	2.3	U
Manufacturing, other	7.4	6.7
Dp services	6.9	NA
Government	0.7	NA
Education	8.2	NA
Finance	7.0	-3.5
Retail/wholesale trade	15.3	2.6
Medical/legal services	12.5	NA
Transportation	4.2	U
Utilities/communications	4.9	0.2
Construction, mining, agriculture	-0.7	5.5
Other business services	-5.3	-6.7

NA: not applicable; U: unavailable

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Spring 1987

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Cleveland, OH May 5
Columbus, OH May 12
Des Moines, IA Apr 29
Detroit, MI Apr 7, Apr 30
Grand Rapids, MI Apr 28
Indianapolis, IN Apr 14
Kansas City, MO May 20
Madison, WI Apr 21
Milwaukee, WI May 12
Minneapolis, MN May 28
Omaha, NE Apr 1
St. Louis, MO May 6
Toledo, OH Apr 23

NORTHEAST AND MID-ATLANTIC
Boston, MA Apr 24
Buffalo, NY May 21
Framingham, MA May 28
Harrisburg, PA Apr 30
Hartford, CT Apr 16
Smithtown, NY Apr 8
Manchester, NH May 7
Morristown, NJ May 12
New Haven, CT May 6
New York, NY Apr 2, May 13
Philadelphia, PA May 7
Pittsburgh, PA Apr 23
Portland, ME Apr 30
Providence, RI May 14
Tarrytown, NY Mar 31

SOUTH AND SOUTHEAST
Atlanta, GA May 20
Baltimore, MD Apr 27
Baton Rouge, LA Apr 28
Birmingham, AL Apr 28
Charlotte, NC Apr 10
Columbia, SC May 5
Ft. Lauderdale, FL May 5
Jackson, MS Apr 7
Nashville, TN May 27
New Orleans, LA Apr 30
Orlando, FL Apr 16
Raleigh, NC May 15
Richmond, VA Apr 16
Tampa, FL May 13
Washington, DC Apr 7, May 22

SOUTHWEST
Austin, TX May 6
Dallas, TX Apr 23
Denver, CO Apr 16
Houston, TX Apr 1, May 19
Oklahoma City, OK May 6
Phoenix, AZ Apr 15
San Antonio, TX May 5
Tulsa, OK May 5

WEST AND HAWAII
Honolulu, HI May 21
Los Angeles, CA Apr 23, Apr 30, May 13
Portland, OR May 1
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Salt Lake City, UT May 5
San Diego, CA May 7
San Francisco, CA May 6
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1987 Dp Budget Survey

tune 1000 companies. But it seems inevitable that people spend more on pcs than they expect to: managers report they actually spent 10% of their 1986 dp budgets for pcs, a share more than 16% higher than they had reported planning for the year.

Microcomputer software's piece of the budget action is up strongly for 1987 at Fortune 1000 companies, rising 18.2%, while in the total sample, managers hope to keep spending flat at 2.5%.

Mainframe and minicomputer software expenditures, however, are headed down slightly at Fortune 1000 companies, say respondents. Budgeters in the total sample expect to spend a bit more this year: applications software costs will rise to 4% of the budget; systems software costs will grow to about 2.3% of the budget.

But dp budgeters don't have a very good record when it comes to forecasting their software expenditures. Comparing what MIS managers actually spent with what they said they had budgeted is instructive.

Last year, Fortune 1000 users reported that they had earmarked 2.3% of their budgets for mainframe and minicomputer applications; the actual share as revealed in this year's survey was 3.8%, fully 65% higher than planned. In every software category, actual share of budget was higher than planned, with most about a third higher. The best record was scored by all sites' estimates of the mainframe and minicomputer systems software share of budget: it was off by only 4.8%.

Data communications will consume more than 4% of the dp budget in 1987, up 17% over its share in 1986. But datacom spending had risen 30% the year before; while growth is still strong, apparently a lot of what needs to be connected is already hooked up.

The biggest percentage increase of budget share in 1987 will be desktop publishing. While the desktop publishing category is still small, only about 1% of total budget for the total sample, it is 25% higher than it was last year. For the Fortune 1000 sample, the share of budget will leap 50%.

The biggest losers? Probably consultants. The overall sample's plans to spend 1.7% of the 1987 budget on consultants will mark a 10.5% drop from 1986's budgets.

The Fortune 1000 reports it will hit the consultants even harder, dropping the freelancers' share of the budget by more than 25%, to 1.1%. But, here too, budgeteers don't have a very good record as forecasters: last year, respondents claimed they were going to cut consultant costs, and actual spending in this category was as much as 36.4% higher than planned.

Dp departments also spent more on peripherals last year than they thought they would, with Fortune 1000 users predicting a 2.9% share and actually using 3.5% of their budgets for the equipment. The average percentage actually spent at all sites was 4.1%, almost a third higher than the 3.1% of the budget that was planned. ■

Methodology

The 1987 DATAMATION Data Processing Budget Survey polled a cross-section of United States users from a variety of industrial sectors. The survey was designed to reflect the magazine's readership: results were tabulated for all sites, including Fortune 1000 sites, which were also tabulated as a separate category.

The survey began in early December when 5,000 questionnaires were mailed to a random sample of DATAMATION subscribers. A total of 517 were received by Jan. 9, a third of them from Fortune 1000 sites.

The industry sector that produced the most responses was computer services (23%), followed by nondp manufacturing (14%). Sixty-nine percent of the responding sites were identified as the headquarters of the organizations.

The respondents reported average 1986 corporate revenues of $325 million and predicted average revenues of $345 million for 1987. The average data processing budget for 1986 was $1.6 million and for 1987 is $1.7 million. Almost 10% of the sample, however, reported annual dp budgets of more than $5 million.

This year, the survey asked respondents to estimate spending on data processing goods and services not on the official data processing budget. The 38% of respondents who replied to this question estimated that in 1986 an average of $1.13 million was spent on off-budget dp; the same respondents expect 1987's off-budget spending to average $1.07 million.